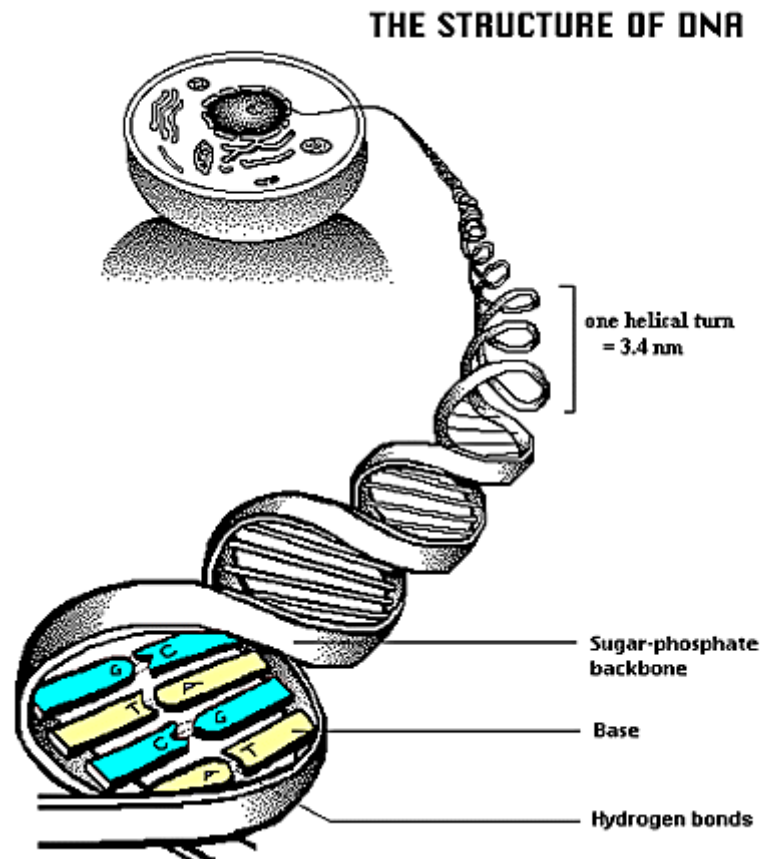


DNA - Chromosome - Allele - Gene - Genotype – Phenotype

DNA DETAILS

DNA stands for Deoxyribonucleic Acid. It is special because it holds the code for every cell in your body.



The structure of DNA is illustrated by a right handed double helix, with about 10 nucleotide pairs per helical turn. Each spiral strand, composed of a sugar phosphate backbone and attached bases, is connected to a complementary strand by hydrogen bonding (non-covalent) between paired bases, adenine (A) with thymine (T) and guanine (G) with cytosine (C).

Adenine and thymine are connected by two hydrogen bonds (non-covalent) while guanine and cytosine are connected by three.

This structure was first described by James Watson and Francis Crick in 1953.



During Mitosis and Meiosis DNA replicates and condenses to form this structure known as a chromosome. It is made of two chromatids connected by a centromere. Each chromatid is a double helix. On each chromosome there are many gene sites. On each chromatid there is one allele for a gene. These alleles can be dominant or recessive. They can be expressed as a phenotype or a genotype.